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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,360	04/01/2004	Paul V. Cavallaro	84-125	7768
23523	7590	09/12/2005		
NAVAL UNDERSEA WARFARE CENTER DIVISION NEWPORT 1176 HOWELL STREET, CODE 000C BLDG 112T NEWPORT, RI 02841			EXAMINER FIELD, LINDA PENA	
			ART UNIT 2855	PAPER NUMBER

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/814,360	CAVALLARO, PAUL V.	
	Examiner	Art Unit	
	Linda P. Field	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5, 7 and 10-19 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because Figure 2 lacks labeling for the x and y axis. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

a. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The phrase "calculated as a traction free boundary with an offset" is not descriptive nor is it explained how it is calculated to arrive at a traction free boundary with an offset.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

b. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oplinger, et al (On the Streamline Specimen for Tension Testing of Composite Materials). With respect to Claim 1, Oplinger teaches an axisymmetric first end section, an axisymmetric second end section and an axisymmetric gauge section positioned centrally between said axisymmetric first end section and said axisymmetric second end section, wherein said axisymmetric first end section adjoins said axisymmetric gauge section by a first variable curvature transition fillet, and wherein said axisymmetric second end section adjoins said axisymmetric gauge section by a second

variable curvature transition fillet. Figure 1 illustrates the various specimen types of interest and includes a bowtie shaped specimen which has the elements of Claim 1. Oplinger lacks a tensile specimen with a surface stress concentration factor close to unity. However, Oplinger discloses that long slender shapes with gradual tapers are required to avoid shear failures in tension test specimens. The bow tie shape was introduced in 1969 and the stress analysis results offer a means of drawing conclusions about the effect of taper angle (see page 533). Oplinger further reveals the specimen types being subjected to significant stress concentrations. The ideal specimen design as revealed by Oplinger is one which minimizes shear stress and tensile stress peaks in the tapered region and avoids the bonded tabs, where adverse environments make tab failures unavoidable (see page 539). The impetus for developing boundary shapes would be for eliminating stress concentrations (see page 539). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to develop a tensile specimen with a surface stress concentration factor close to unity. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

c. With respect to Claim 8, Oblinger teaches uniform axial stress fields existing within and adjacent to the gauge section. (Oblinger discloses a streamlined specimen shapes which have the capability for minimizing stress peaks responsible for adverse test results, see page 532.))

d. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oplinger, et al ("On the Streamline Specimen for Tension Testing of Composite Materials") in view of Hiyoshi (6460418).

e. With respect to Claim 2, although Oplinger does not elaborate on a first and second collet, it is inherent that a first and second collet is part of the specimen given that a first and second collet is utilized in order to attach the specimen to conduct tensile tests. Hiyoshi teaches a first collet positioned substantially near a free end of said axisymmetric first end section and a second collet positioned substantially near a free end of said axisymmetric second end section. Test specimen 2 has a first collet and second collet as shown in Figures 1-5. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to utilize a first and second collet in the specimen for the purpose of conducting tensile tests. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

f. With respect to Claim 3, Hiyoshi teaches a first load transfer region defined by said first shoulder and said axisymmetric first end section, and a second load transfer region defined by said second shoulder and said axisymmetric section wherein said first shoulder and said second shoulder are oversized load bearing shoulders. (Figures 1-5 illustrate the oversized load bearing shoulders which eliminate the possibility of a bearing stress-induced fracture within the first load transfer region and the second load transfer region prior to failing said axisymmetric gauge section.)

g. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oplinger as applied to claim 1 above, and in view of Whatley.

h. With respect to Claim 6, Oplinger lacks a first and second threaded portions positioned near the free ends of first and second sections, it is inherent that a first and second threaded portions are part of the specimen given that threaded portions for test specimen are commonly known and used in the art for conducting specimen tensile tests. Whatley teaches a first threaded portion positioned near a free end of axisymmetric first end section and a second threaded portion positioned near a free end of axisymmetric second end section. (External threads 43 are formed on the outer surface of test specimen receiving portion 30, Column 2, lines 60-61.) It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to utilize a first and second threaded portions in the specimen for the purpose of conducting tensile tests. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

Allowable Subject Matter

4. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 5, 7 and 10-19 are allowed. The following is a statement of reasons for the indication of allowable subject matter:

With respect to Claims 4 and 5, the prior art fails to show a maximum said surface stress concentration factor is 1.01, a length of said MAST specimen is 1.0 inch and a diameter of said axisymmetric gauge section is 0.042 inch.

With respect to Claim 7, the prior art fails to show a maximum said surface stress concentration factor is 1.01, a length of said MAST specimen is 1.0 inch and a diameter of said axisymmetric gauge section is 0.080 inch.

With respect to Claim 10, the prior art fails to show an electrical apparatus electrically joined to said first test block and said second test block wherein said electrical apparatus records voltage, current, impedance and resistance of said tensile specimen while said tensile specimen is tested.

With respect to Claims 11 and 12, the prior art fails to show the tensile specimen setup according to Claim 10 and which further comprises said first test block adapted to receive said collet and said second test block adapted to receive said collet of said axisymmetric second end section.

With respect to Claims 13-19, the prior art fails to show a method of testing a piezo electric material comprising measuring axial forces on said sample during said step of subjecting, and examining said sample after failure.

Remarks

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents 2454850, US2003/0188585 A1, US 2003/0033860 A1, 5054324, 5078843, 6023980, 6880385 B2, 5798463, 4895750 and 5431062 pertain to tensile stress testing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda P. Field whose telephone number is 571-272-6001. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LPF



MAX NOORI
PRIMARY EXAMINER